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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/883,016	06/15/2001	Patrick J. Murphy	00CR140/KE	9752

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ROCKWELL COLLINS, INC.
INTELLECTUAL PROPERTY DEPARTMENT
400 COLLINS ROAD NE
M/S 124-323
CEDAR RAPIDS, IA 52498

EXAMINER

AL AUBAIDI, RASHA S

ART UNIT	PAPER NUMBER
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2642

DATE MAILED: 03/18/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/883,016

Applicant(s)

MURPHY ET AL.

Examiner

Rasha S AL-Aubaidi

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 15 June 2001.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-20 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-20 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 15 June 2001 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date 06/15/2001.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

DETAILED ACTION

Claim Rejections - 35 USC § 102

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

2. Claims 1-3, 5, and 9-12 are rejected under 35 U.S.C. 102(b) as being anticipated by Gehring et al.

Regarding claims 1 and 9, Gehring teaches a direct conversion quadrature receiver (reads on element 10, see col. 3, lines 61-62, also Fig. 1), comprising: a primary local oscillator (LO 20, see Fig. 1) that down-converts a received RF signal to a quadrature intermediate frequency (IF) signal (see col. 4, lines 8-10 and lines 57-59); and a dithering controller (this reads on the voltage controlled oscillator, see col. 4, lines 12-15) responsive to said quadrature IF signal generated by said primary LO for communicating a feedback signal back to said primary LO, said feedback signal controlling an oscillation frequency of said primary LO (see col. 4, lines 52-56); wherein said dithering controller offsets down-conversion of said RF signal by said primary LO (col. 4, lines 8-15) from a zero-IF (examiner^{is} interpreting the value for “from a zero-IF” as 100 kHz, see col.

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4, lines 8-12 and col. 3, lines 31-35, also lines 65-68) in order to reduce a phase and gain error of said quadrature IF signal (see abstract and col. 5, lines 18-27).

Regarding claims 2 and 10, Gehring teaches a phase and gain error measurement apparatus that measures a phase and gain error of said quadrature IF signal and generates a phase and gain error signal, wherein said dithering controller offset said primary LO based on said phase and gain error (this basically reads on AGC controlled RF amplifier 14 in combination with the AGC detector 15, see col. 3, lines 64-68 and col. 4, lines 1-5, see also, col. 5, lines 39-56).

Regarding claim 3, Gehring teaches the dithering controller (voltage controlled oscillator, see col. 4, lines 12-15) controls said primary LO (20) to step said quadrature IF signal in response to said phase and gain error signal (col. 5, lines 18-27).

Regarding claim 11, Gehring teaches stepping said primary LO by a predetermined frequency step to produce an IF that is offset from zero hertz (see col. 4, lines 65-68).

Claims 5 and 12 are rejected for the same reasons as discussed above with respect to claims 1 and 9. The hop sequence may read on 100 kHz.

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Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

4. Claims 4, 6-8, and 13-20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Gehring.

Gehring features are addressed in the above rejection.

Regarding claims 4 and 6, Gehring does not exactly teach a memory storing a predetermined step size that steps said primary LO away from current

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quadrature IF signal and a predetermined step limit that limits a stepping of said primary LO to a predetermined frequency range.

However, having a memory or a table within the memory that stores predefined numbers as a threshold, which drives away the signal every time it reaches that threshold is well known in the art. Obviously, having a table with threshold values will help to make any system function smoothly and without any errors.

Regarding claim 7, Gehring teaches a filter bank (this reads on the signal passing through the capacitors 24a and 24b, see col. 24-38 or capacitors 30a and 30b to filters 32a and 32b, see col. 5, lines 3-8), an interferer level detector (reads on AGC detector that is coupled to the output element 42, see col. 5, lines 22-27), and a level frequency discriminator (reads on discriminator 44, see col. 5, lines 28-41). Gehring does not exactly teach the use of a level frequency threshold that compares a signal power of each frequency spectra to said predetermined power threshold. However, setting up threshold parameters that distinguish each frequency spectra to the predetermined threshold is obvious. Comparing a signal power of each frequency spectra to a predetermined power threshold does not rise the invention to the level of patentability.

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Claims 8 and 17-20 are rejected for the same reasons as discussed above with respect to claim 7. Claim 19 recites "creating a plurality of quadrature IF frequency spectra". See Gehring, col. 4, lines 24-33.

Claims 13-16 basically read on the process of finding the outlier phase and gain error and removing the outlier phase and gain error. Gehring teaches setting up the signal frequency to a desired signal frequency in order to prevent any loss (see col. 4, lines 52-67). Obviously, when a signal is found in a phase and gain error state, logically it has to be either removed or corrected.

Conclusion

5. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Tsuda (US PAT# 6,088,573) teaches transmission control apparatus for mobile radio satellite communication system (see summary of the invention).

Bedgedjian (US PAT # 6,775,528) teaches oscillators are used to recover larger errors (see abstract).

Golsberg (US PAT # method and apparatus in a wireless communication system for reducing errors caused by intersymbol interface during a simulcast transmission (see abstract).

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6. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Rasha S AL-Aubaidi whose telephone number is (703) 605-5145. The examiner can normally be reached on Monday-Friday from 8:30 am to 5:30 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Ahmad F Matar, can be reached on 305-4731. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Examiner

Rasha S. Al-Aubaidi

12/22/2004



AHMAD MATAR
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 2600